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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,040	06/21/2006	Albert W. Marsman	NL03 1486 US1	6986

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EXAMINER	
DANG, TRUNG Q	
ART UNIT	PAPER NUMBER
2892	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,040	MARSMAN ET AL.	
	Examiner	Art Unit	
	Trung Dang	2892	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/21/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8, and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimoda et al (US 6,420,190).

With reference to Figs. 3B and 8A-8C, the prior art teaches the claimed invention in that it discloses a method for patterning a ferroelectric polymer or oligomer layer comprising the steps of:

providing a ferroelectric polymer or oligomer composition 233 having a crosslinking agent;

applying the ferroelectric polymer or oligomer composition 233 to a substrate 110 to form a ferroelectric polymer or oligomer layer on the substrate (Fig. 8A and col. 13, lines 31-35);

selectively crosslinking a part of said ferroelectric polymer or oligomer layer (Fig. 8B and col. 13, lines 36-44 and lines 60-65); and

removing uncrosslinked parts of said ferroelectric polymer or oligomer layer (Fig. 8C and col. 14, lines 3-9).

Note that the reference defines at col. 13, lines 38-42 that the patterning characteristics upon irradiation with energy ray of the ferroelectric polymer or oligomer

233 means crosslinking reaction is induces by energy rays. Thus, the light-exposed portions of the ferroelectric polymer or oligomer layer 233 shown in Fig. 8B undergo a crosslinking reaction. Accordingly, the photosensitizer (col. 13, lines 45-46) that is added to a sol-gel solution containing the ferroelectric material functions as a crosslinking agent because the presence of the photosensitizer renders polymerization reaction (i.e., a crosslinking reaction) caused by light energy. The disclosed photosensitizer is therefore readable on the claimed crosslinking agent.

For claims 2-4, the disclosed organic polymer ferroelectric includes polyvinylidene fluoride (col. 13, lines 32-33) which has a molecular formula $-(CH_2CF_2)_n-$

For claims 5-6, the presence of the photosensitizer (crosslinking agent) would inherently lead to an electron deficient intermediate as claimed so that crosslinking reaction can take place.

For claim 8, see col. 13, line 54 for the disclosure of applying the ferroelectric material 233 by spin coating and col. 12, lines 16-17 for an organic solvent that is used to prepare a solution containing the ferroelectric material for coating.

For claims 10-13, see col. 13, lines 11-13 for the disclosure of a method of manufacturing a ferroelectric memory device according to the method described above. Accordingly, said method results in a ferroelectric memory device (an electronic device) comprising a patterned crosslinked ferroelectric layer 233 which is a capacitor insulation layer.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoda et al as above in view of Kamisawa (US 5,627,013).

Shimoda teaches a method for patterning a ferroelectric polymer or oligomer layer as described above. Shimoda differs from the claim in not disclosing the crosslinking agent is a bisazide as claimed.

Kamisawa teaches that to improve the sensitivity to electromagnetic waves, a bisazide compound may be added to a photo active polymer solution having ferroelectric component to form crosslinks in the solution (col. 5, lines 6-10 and col. 7, lines 41-44).

It would have been obvious to one of ordinary skill in the art to modify Shimoda's teaching by adding a crosslinking agent of bisazide in the photo active ferroelectric polymer or oligomer 233 as suggested by Kamisawa for the purpose of enhancing the crosslinking reaction.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimoda et al. as above in view of Nordal et al (US 2002/0160116).

Shimoda teaches a method for patterning a ferroelectric polymer or oligomer layer as described above. Shimoda differs from the claim in not disclosing the solvent that is used to prepare the solution containing the ferroelectric material for coating is of 2-butanone.

Nordal discloses that it is a conventional procedure for spin coating of PVDF (polyvinylidene difluoride) and its co-polymers from a solution comprising methyl ethel ketone (MEK) (also known as butanone).

It would have been obvious to one of ordinary skill in the art to modify Shimoda's teaching by using the MEK solvent as suggested by Nordal for preparing the solution containing the ferroelectric material for coating because such application of MEK solvent in the same field of endeavor is known, and the selection of a known material based on its suitability for its intended use support a prima facie obviousness determination (M.P.E.P § 2144.07).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the spincoating solution" in the first line. There is insufficient antecedent basis for this limitation in the claim.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thao Le can be reached on 571-272-1708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Trung Dang
Primary Examiner
Art Unit 2892

2/19/08

/Trung Dang/